REMARKS

Upon entry of the present Reply, claims 1-3, 5-10, 12-27, 29-55 and 57-59 are pending in the present application.

Claims 14, 15, 18, 19 and 53-55 have been withdrawn.

Claims 4, 11, 28 and 56 are cancelled herein.

Claims 1, 3, 7, 10, 12, 23-27, 29-40, 43, 51, 52, 57 and 58 are amended herein. Support for the amendments may be found in the application as filed. Support for the amendment of claims 1 and 43 to include the 55 wt.% feature may be found, for example, in original claim 27 and in the specification at p. 9 in [0038]. Support for the amendment of claims 1, 27, 43 and 52, to specify a quaternary ammonium, phosphonium or sulfonium cation may be found in the claims as filed. Support for the range of carbon atoms in the cation may be found, for example, in original claim 4. Support for the substituent definitions in claims 1 and 27 may be found, for example, at p. 6, in [0021]. Support for the amendment of the alkyl group size in claims 3 and 11 is in original claims 4 and 12. Claim 7 is amended to correct an obvious typographical error. Support for the amendment of claims 23 and 30 to specify the substituents may be found, for example, at page 7 in [0027]. Claims 24 and 31 are amended to correspond to the amendment of claims 1 and 27. Support for the amendment of claims 25 and 32 may be found at p. 1, in [0003]. Claim 26 is amended to correspond to the amendment of claim 1. Claims 29 and 33 are amended to correct the dependency. Claims 34 and 51 are amended to identify docusate, supported at p. 3, in [0012]. Any other amendments not specifically mentioned are supported on the same basis or in the claims as originally filed.

The specification has been amended in a number of locations to correct obvious typographical and/or spelling errors. None of these corrections contain any new matter.

The specification has been amended to incorporate three paragraphs of subject matter that was previously incorporated by reference from U.S. Appl.. No. 10/642,437. This copending, commonly assigned application was incorporated into the present application by reference in [0042] as originally filed, and a portion of this disclosure has

now literally been incorporated into the present application. This incorporation therefore does not constitute new matter.

Reconsideration of the application based on the presently pending claims is respectfully requested in view of the foregoing amendments and the following remarks.

Rejections under 35 U.S.C. §112, Second Paragraph

Claims 1, 3, 7, 10, 12, 16, 17, 20, 23, 27, 30, 43, 50, 52, 56 and 58 and others stand rejected as indefinite for a variety of reasons. Applicants respectfully traverse all of these rejections. In some cases, the claims have been amended to address the alleged indefiniteness. In other cases, Applicants respectfully submit that there is no indefiniteness and that any person of ordinary skill in the art would readily understand what is claimed.

Claims 1, 3 10, 12 and 56 are allegedly indefinite for "more than 4", "five or more" and y is greater than 0". The claims have been amended to address the first two of these points.

Regarding the "y is greater than zero", the matter incorporated by reference addresses this point. In addition, it is so well known in the art that it does not require substantiation that for Al_yR_{3y+1}, a value of y greater than about three is not known to form a stable, isolatable compound. Thus, $AlCl_4$, Al_2Cl_7 and Al_3Cl_{10} are known or have been detected. In addition, as noted in the incorporated disclosure, it is possible that additional aluminum chloride may be present in the mixture resulting in intermediate (non-integral) values of y. Thus, Applicants respectfully submit that there is no indefiniteness in the value of y.

The chemical formula in claim 7 (and in the corresponding text of the specification) has been amended to correct the obvious typographical error.

The phrases "substituted ... alkyl or alkenyl groups", "substituted ... alkenyl group" and "substituted" have been objected to. The claims have been amended to address these points, and Applicants respectfully submit there is no indefiniteness in the claims as amended.

The term "hydrocarbon" has been objected to as indefinite. Applicants respectfully traverse this rejection. The term "hydrocarbon" is well known and well understood in organic chemistry, and no one of skill in the art would find anything indefinite about the use of this term. As is well known, a hydrocarbon is a compound consisting of carbon and hydrogen. The Examiner is respectfully reminded that a patent application is directed to those of skill in the art and need not describe every minute detail of aspects of the invention that are within the skill of the skilled person. Applicants respectfully submit that it is unnecessary to further specify the "hydrocarbon" and request the Examiner to withdraw this objection.

"BMIM" has been objected to. Contrary to the Examiner's contention, the application specifies on page 1, in [0003], the meaning of BMIM. Nevertheless, Applicants have amended the claims to specify this term.

The term "containing" has been objected to in claim 52. Contrary to the Examiner's contention, this term is well understood. The Federal Circuit has held that the meaning of "containing" is the same as "comprising" or "including". See, *Mars Inc. v. H.J. Heinz Co.*, 71 USPQ2d 1837, 1841-2 (Fed. Cir. 2004) (*citing* MPEP, 8th ed., rev. 1, §2111.03 (2003)). Thus, not only the Federal Circuit but also the MPEP sanction the use of the term "containing". Nevertheless, in order to advance prosecution of this application, claim 52 has been amended to use "comprising."

The term "derivative" has been objected to. Applicants respectfully traverse this objection and submit that any person of ordinary skill in the art would readily understood the meaning and scope of this term. Furthermore, the use of this term in claims 52 and 58 is so straightforward that any person of ordinary skill in chemistry would understand the use of "derivative" in the phrases "an anion of a bis(organo)ester derivative of sulfosuccinic acid," and "an anion of a bis(organoamide) derivative of sulfosuccinic acid". To wit, such person of skill in the art would know that sulfosuccinic acid has two carboxylic acid residues which can form an ester or an amide. The person would know, for example, that the "bis(organo)ester derivative of sulfosuccinic acid", is the bis-ester. The person would easily understand that the ester (or amide) has been ionized at the

sulfonic acid residue to form an anion. All of this is straightforward chemistry easily within the grasp of any person having ordinary skill in the chemical arts. Applicants respectfully submit that there is no indefiniteness in this language. However, should the Examiner wish to suggest suitable claim language, Applicants will consider using same.

For all the foregoing reasons, Applicants respectfully submit there is no indefiniteness under 35 USC 112, second paragraph, in the presently pending claims.

Rejections under 35 U.S.C. §102(b)

Claims 1-7, 16, 17 20, 21, 39-41 and 56 stand rejected as anticipated by Longley et al., US 4,480,119. Applicants respectfully traverse the rejection of these claims over this reference, since the reference fails to disclose all the features of the claimed invention. Specifically, Longley et al. fails to disclose a quaternary ammonium salt and fails to disclose the claimed at least 55 weight percent of an ionic liquid.

Claims 1-7, 16, 17, 21, 21, 39-41 and 56 stand rejected as anticipated by Groote et al., US 2,072,085. Applicants respectfully traverse the rejection of these claims over this reference, since the reference fails to disclose all the features of the claimed invention. Specifically, Groote et al. fails to disclose a quaternary ammonium salt and fails to disclose the claimed at least 55 weight percent of an ionic liquid.

Claims 1-7, 16, 17, 19, 20, 22-24, 39, 40, 43 and 50 stand rejected as anticipated by Kissa, US 4,063,889. Applicants respectfully traverse the rejection of these claims over this reference, since the reference fails to disclose all the features of the claimed invention. Specifically, Kissa fails to disclose the claimed at least 55 weight percent of an ionic liquid.

Claims 43, 50 and 52 stand rejected as anticipated by Takimoto et al., US 5,125,968. Applicants respectfully traverse the rejection of these claims over this reference, since the reference fails to disclose all the features of the claimed invention.

Specifically, Takimoto et al. fails to disclose a quaternary ammonium salt and fails to disclose the claimed at least 55 weight percent of an ionic liquid. Regarding claim 52, Takimoto fails to disclose carbon dioxide at supercritical conditions together with the claimed ionic liquid.

For the foregoing reasons, Applicants submit that the claimed subject matter of the various groupings of claims rejected as anticipated is not anticipated by any of the foregoing references, that there is no legal basis for a *prima facie* case of anticipation of the presently claimed invention, and that the presently pending claims are in condition for allowance. Notice to such effect is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 1-13, 16, 17, 20-35, 37, 39-42 and 56 stand rejected as unpatentable over Bratescu et al., US 6,306,805. Applicants respectfully traverse all of the rejections of all of these claims for at least the following reasons.

The Examiner contends that Bratescu et al. discloses surfactant compositions containing a mixture of one cationic surfactant including a quaternary ammonium compound and an anionic sulfosuccinate, and further contends that Bratescu et al. discloses that the surfactant concentration may be 3-40%. The Examiner thereupon concluded that the difference in concentration range would have been obvious.

Applicants traverse the rejection of these claims over Bratescu et al. Bratescu et al. fails to disclose or suggest *anything* that would have lead a person of ordinary skill in the art to Applicants' claimed invention.

Bratescu et al. discloses surfactant compositions comprising a mixture of at least one cationic surfactant, at least one anionic surfactant, preferably a sulfonated methyl ester and/or a sulfonated fatty acid, and at least one "bridging surfactant" selected from semi-polar nonionic, ethoxylated alkanolamide, and amphoteric/zwitterionic surfactants, and mixtures thereof. Throughout the disclosure of these primary ingredients Bratescu et al. consistently discloses that these primary ingredients make up from 7 to 40% of the overall composition. In addition to these primary three ingredients, Bratescu et al.

discloses that the compositions may further comprise auxiliary nonionic surfactants (col. 31-33; auxiliary anionic surfactants, col. 33-35; and an extensive list of other optional ingredients, col. 35-42. At the end of this long list of additional ingredients, and only there, Bratescu et al. then disclose that the water content, in addition to all the other ingredients, both primary three and the wide variety of optional extra ingredients, may be from 50 to 90%.

Bratescu et al. fails to disclose or even suggest an ionic liquid. Bratescu et al. discloses nothing more than a conventional combination of surfactants. There is nothing whatsoever in Bratescu et al. that would suggest how the disclosure could be modified to form an ionic liquid.

Bratescu et al. teaches a dilute aqueous solution containing a quaternary ammonium compound at a concentration in the range from 0.05 to 5 wt.% (see, e.g., col. 6, lines 10-20) and an anionic sulfonium compound at a concentration in the range from 3 to 22 wt.%. There is simply no way to get from this disclosure to the claimed ionic liquid composition comprising at least about 55 wt.% of the ionic liquid. As is well known, an ionic liquid is a salt, i.e., a compound containing equivalent amounts of the anion and cation. The very highest content of equivalent amounts of the Bratescu et al. quaternary ammonium and sulfonium is 5 wt.% + 5 wt.% = 10 wt. %. This is necessarily so because the quaternary ammonium has a maximum content of 5 wt.%. Bratescu et al. discloses that auxiliary nonionic and anionic surfactants can be added. See, e.g., col. 31, line 16 to col. 33, line 57, and col. 33, line 58 to col. 35, lines 64, but does not disclose or suggest addition of further cationic surfactants.

Furthermore, the Examiner contended that the disclosure relating to water content, at col. 42, lines 31-34 would lead one to the claimed concentration of at least 55% by weight. Applicants respectfully submit that this is an incorrect and clearly erroneous reading of the disclosure cited. Specifically, the cited disclosure relates to the *ternary* surfactant blend disclosed by Bratescu et al. together with all of the various different auxiliary ingredients and optional additives, not to the combination of sulfosuccinate anion and cation such as that claimed in the present invention, which

combination is shown above to amount to *no more than* 10 wt.% of the Bratescu et al. composition. That is, a very large portion of the remainder of a composition of Bratescu et al. would be composed of the third surfactant and the auxiliary ingredients and additives. This, together with the repeated disclosure of 3-40% total surfactants, can only mean that there is not even a suggestion to increase the components allegedly forming an "ionic liquid" to any concentration close to that claimed.

Applicants respectfully submit that to attempt to read the cited disclosure at col. 42, lines 31-34 as a suggestion to increase the concentration to the claimed at least 55 wt.% is to engage in unsupported and legally improper hindsight reconstruction of Applicants' claimed invention. The only way the water content of Bratescu et al. would be so low as less than 45 wt.% or less (assuming that the entire content of the claimed composition other than the basic ternary (cationic, anionic, and bridging surfactants) mixture is water) is by adding a large proportion of the disclosed auxiliary surfactants and other additives. Bratescu et al. quite clearly limits the claimed *ternary* mixture to the discloses 3 to 40% range. As noted above, the 3-40% relates to the *ternary* mixture, and as shown, the mixture of quaternary ammonium and sulfosuccinate allegedly forming the "ionic liquid" in Bratescu et al. would be at the considerably lower concentration of no more than 10 wt.%.

Thus, there is no basis for a contention that Bratescu et al. would have rendered obvious the claimed invention, or for a rejection of Applicants' claims based on such a contention.

Accordingly, Applicants request the Examiner to withdraw the rejection of these claims over Bratescu et al.

Claims 27, 28, 36 and 40 stand rejected as obvious over Quack et al. US 4,150,216. Applicants respectfully traverse all of the rejections of all of these claims for at least the following reasons.

Quack et al. discloses hair-treatment agents including branched copolyesters including SO_3M groups, wherein M may represent an ammonium ion or the cationic

radical of an organic amine. As admitted by the Examiner, the highest concentration of the mixture is 10%, and 0.5 to 4% is preferred. Example 3 discloses use of a quaternary ammonium compound: a solution of 3 grams of the polyester mentioned in Example 1, 0.15 gram of pentaoxethylstearylammonium chloride and 50 grams of water is produced while stirring. A mixture of 0.1 gram of perfume oil and 46.75 grams of ethyl alcohol is then introduced into this solution. This solution thus has a content of 96.75 grams of solvent, 3 grams of a polyester which comprises a small percentage of a sulfosuccinate and 0.15 gram of the quaternary ammonium compound. Thus, in this Example, the actual content of the material contended by the Examiner to be an "ionic liquid" (which it is not, but is referred to as such for the sake of argument only) is only about 0.5%. This is a far cry from the claimed at least about 55 wt.% of the claimed ionic liquid.

Quack et al. fails to disclose or even suggest an ionic liquid. Quack et al. discloses nothing more than a conventional dilute, water-based hair treatment formulation. There is nothing whatsoever in Quack et al. that would suggest how the disclosure could be modified to form an ionic liquid.

Applicants respectfully submit that to attempt to read the disclosure of Quack et al. as in any possible way supporting or suggesting to increase the concentration to the claimed at least 55 wt.% is to engage in indisputable, unsupported, and legally improper hindsight reconstruction of Applicants' claimed invention. This is simply incorrect.

For the foregoing reasons, Applicants submit that the claimed subject matter as a whole would not have been obvious, that there is insufficient basis for a *prima facie* case of obviousness of the presently claimed invention, and that the presently pending claims are in condition for allowance. Notice to such effect is respectfully requested.

Supplemental Information Disclosure Statement

Applicants submit simultaneously herewith (under separate cover) a supplemental IDS to submit a Japanese reference cited in a corresponding foreign application, together with an English abstract of the reference.

Serial No. 10/642,438 Docket No. SACHP0145US

Conclusion

In the event issues arise as a result of the filing of this paper, or remain in the prosecution of this application, Applicants request that the Examiner telephone the undersigned attorney to expedite allowance of the application. Should an extension of time be necessary for the present Reply to the outstanding Office action to be timely filed, petition therefor is hereby made and, if any additional fees are required for the filing of this paper, the Commissioner is authorized to charge those fees to Deposit Account #18-0988, Docket No. SACHP0145US.

Respectfully submitted,

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Date: May 16, 2006

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